



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/574,258

03/28/2006

Angelo Beati

12928/10026

9739

23280 7590 02/02/2010
Davidson, Davidson & Kappel, LLC
485 7th Avenue
14th Floor
New York, NY 10018

EXAMINER

PALABRICA, RICARDO J

ART UNIT

PAPER NUMBER

3663

MAIL DATE

DELIVERY MODE

02/02/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,258	Applicant(s) BEATI ET AL.	
	Examiner Rick Palabrica	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13, 16-22 and 24-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13, 16-22 and 24-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's 11/20/09 submission, which directly amended claims 13, 17, 20, and 26, added new claims 31-34, and traversed the rejection of claims in the 8/19/09 Office action, has been entered.

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a) the lattice reinforcing device directly secured to the guide tubes by tube expansion (claim 32); and b) the lattice reinforcing device directly secured to the guide tubes by sleeving (claim 33), must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

Art Unit: 3663

replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 34 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not

Art Unit: 3663

described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claim recites the limitation,

“wherein the lattice reinforcing device have cells with interior walls, the guide tubes contacting at least some of the interior walls.”

This limitation means that some device interior walls are contacted by the guide tubes and some device interior walls are NOT contacted by the guide tubes.

There is neither an adequate description nor enabling disclosure as to which of the device interior walls are contacted by the guide tubes and which of the device interior walls are NOT contacted by the guide tubes.

4. Claim 34 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The new matter pertains to the device interior walls that are not contacted by the guide tubes.

5. Claim 34 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a device wherein the guide tubes contact the interior walls of the lattice reinforcing device, does not reasonably provide enablement for a device wherein some of the interior walls of the lattice reinforcing device are NOT

Art Unit: 3663

contacted by the guide tubes. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make/use the invention commensurate in scope with these claims.

6. Claims 24, 25, 29, 30, 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 34 is vague, indefinite and incomplete, and its metes and bounds cannot be determined because the claim is inconsistent with the specification in regard to the contact configuration between the guide tubes and the interior walls of the lattice reinforcing device.

Claims 24, 25, 29, and 30 each recites, “two sets of crossed plates that are secured to one another, the plates defining between them cells for receiving guide tubes and cells for receiving nuclear fuel rods.” Underlining provided.

There is insufficient antecedent basis for the limitation, “the plates” in the claim. The first set can have two plates, which can be represented by a first horizontal plate and a first vertical plate. The second set can also have two plates, which are represented by a second horizontal plate and a second vertical plate. The limitation, “the plates”, can be interpreted in a number of different ways, e.g., a) first horizontal plate and a first vertical plate; b) second horizontal plate and second vertical plate; c) first horizontal plate and second horizontal plate; d) first vertical plate and a second vertical plate; e) first horizontal plate and second vertical plate; f) first vertical plate and

Art Unit: 3663

a second horizontal plate; g) first horizontal plate, first vertical plate, and second horizontal plate; etc.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 13, 17, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by either one of Nilsson et al. (SE 20010003730) or Nylund (U.S. 5,227,130), who each disclose(s) a PWR nuclear fuel assembly.

Nilsson et al.

As to claims 13 and 34, Nilsson et al. disclose an assembly comprising (see Figs. 1-8): a) nuclear fuel rods 12; b) support skeleton having two nozzles 18, 20; c) guide tubes 13; d) spacer grids 16.

Applicant's claim language, "lattice reinforcing device", reads on stiffening element 30 (e.g., see Fig. 4 and page 12, first full paragraph of the English language translation of SE 20010003730).

Note, for example, in Figs. 1 and 2, that the fuel rods 12 are disposed in an array having a peripheral layer constituting a closed loop and an adjacent layer constituting a closed loop and surrounded by the peripheral layer (see also page 12, 2nd full paragraph of the English language translation of SE 20010003730).

Art Unit: 3663

Note, for example, from Fig. 4 that there are no stiffening elements between the fuel rods of the peripheral layer and between the fuel rods of the adjacent layer. , Nilsson et al.'s stiffening element 30 can be fixed by welding to guide tube 13 (see page 13, lines 11+ of the applied art).

As to claim 16, stiffening element 30 does not have an arrangement for mixing a cooling fluid that is to flow through the nuclear fuel assembly.

Nylund

As to claims 13 and 34, Nylund discloses an assembly comprising (see Figs. 1-7): a) nuclear fuel rods 2; b) support skeleton having two nozzles 4, 5; c) guide tubes; d) spacer grids 3.

Applicant's claim language, "lattice reinforcing device", reads on central spacer 11 that is disposed between two spacer grids 3 (e.g., see Fig. 4 and col. 2, lines 60+).

Note, for example, in Fig. 4, that fuel rods 2 are disposed in an array having a peripheral layer constituting a closed loop and an adjacent layer constituting a closed loop and surrounded by the peripheral layer.

Note, for example, from Fig. 4 that there are no stiffening elements between the fuel rods of the peripheral layer and between the fuel rods of the adjacent layer.

As to claim 16, central spacer 11 does not have an arrangement for mixing a cooling fluid that is to flow through the nuclear fuel assembly.

Art Unit: 3663

The claims are replete with statements that are either essentially method limitations or statements of intended or desired use. For example, “for receiving control rods”, “for receiving guide tubes”, “for receiving nuclear fuel rods”, etc. These clauses, as well as other statements of intended use do not serve to patently distinguish the claimed structure over that of the reference, as long as the structure of the cited references is capable of performing the intended use. See MPEP 2111-2115.

See also MPEP 2114 that states:

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531.

[A]pparatus claims cover what a device is, not what a device does.” Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

The apparatus in the cited references is capable of being used in the same manner and for the intended or desired use as the claimed invention. Note that it is sufficient to show that said capability exists, which is the case for the cited references.

8. Claims 17, 20-22, 26-28, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Nilsson et al.

As to claim 17, stiffening element 30 does not directly contact nuclear fuel rods. They are disposed in cells 17 of spreader 16 that are not occupied by the fuel rods and

Art Unit: 3663

said cells are larger than the cells of the fuel rods (see page 12, 2nd full paragraph of the applied art).

As to claim 20, stiffening element 30: a) does not have an arrangement for mixing a cooling fluid that is to flow through the nuclear fuel assembly; and b) does not have an arrangement for holding nuclear fuel rods.

As to claims 21 and 27, note, for example, in Figs. 1 and 2, that the fuel rods 12 are disposed in an array having a peripheral layer constituting a closed loop and an adjacent layer constituting a closed loop and surrounded by the peripheral layer (see also page 12, 2nd full paragraph of the English language translation of SE 20010003730).

As to claims 22 and 28, note, for example, from Fig. 4 that there are no stiffening elements between the fuel rods of the peripheral layer and between the fuel rods of the adjacent layer.

As to claim 31, Nilsson et al.'s stiffening element 30 can be fixed by welding to guide tube 13 (see page 13, lines 11+ of the applied art).

9. Claims 18, 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Nylund.

Fig. 4 shows the claimed two sets of crossed plates, the plates defining between them cells for receiving guide tubes and cells for receiving fuel rods.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nilsson et al. alone or in combination with Kerrey (U.S. 4,859,408).

Nilsson et al. teach securing the guide tube to the stiffening element by welding. The use of a sleeve or tube expansion as an alternative to welding for securing the guide tube to the stiffening element is a matter of design and/or a matter of optimization. It is a matter of design because any one of sleeving, tube expansion and welding is a well known means to secure a tube to another element, and the selection of the securing means would be a matter of preference by the designer or the owner of the facility using the device. It is a matter of optimization because the choice of the proper securing means would require determination of the most effective means that incurs the minimum cost. As to matters of optimization within prior art conditions or through routine experimentation (see MPEP 2144.05 II.A).

If applicant is of a different opinion, the claims are still obvious over the combination of Nilsson et al. and Kerrey, the latter teaching the use of sleeves and tube bulging (i.e., expansion) are suitable alternatives for securing structural tubes such as guide tubes (see col. 1, lines 25+).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 571-272-6880. The examiner can normally be reached on 6:00-4:30, Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rick Palabrica/
Primary Examiner, Art Unit 3663

January 29, 2010